

A REVISION OF THE POGONOCHERINI OF NORTH AMERICA

(Coleoptera, Cerambycidae)

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The following paper presents the results of a study of the members of the longicorn tribe Pogonocherini which are known to occur on the continent of North America and in the adjacent West India Islands. An attempt has been made to define the genera and species and keys have been offered to assist in their determination. Whenever possible, biological and distributional data have been utilized to shed additional light upon the relationships of species. The study is not intended as a monograph, since the future will undoubtedly reveal many new species, and additional knowledge will probably necessitate a re-arrangement of the group as here conceived. It has been the writer's object merely to include such information as our present knowledge would seem to warrant, and to make known certain changes in our conception of the various genera and species that seem advisable at this time.

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DISTRIBUTION

The Pogonocherini reach their greatest development in America, where fourteen genera and thirty-seven species are known, ranging from Alaska to southern Chile. Europe and Asia share one genus, *Pogonocherus*. Two genera, both monotypic, are found in Asia Minor, and two genera each in New Zealand and Madagascar.

Of our American genera, *Pogonocherus* is the most widely distributed. It is found in the more northern and colder parts of North America, and is, with three exceptions, restricted to the region east of the Rocky Mountains and North of British Columbia. *Poliaenus*, on the other

hand, is practically confined to the region south of British Columbia and west of the Rocky Mountains. *Ecyrus* is southern in distribution, replacing *Poliaenus* on the east coast, where it occurs in the Atlantic and Gulf States as well as in the West Indies and on the eastern coast of Mexico. *Zaplous* and *Callipogonius* occur in a more or less limited area within the range of *Ecyrus*, and *Lophopogonius* within the range of *Poliaenus*. *Lypsimena* is found on both the east and west coasts of North America, while *Ecteneolus* and *Sarillus* seem to be typically Mexican and Central American. In general, all of our genera appear to be Neotropical or southern in origin except *Pogonocherus* (Holarctic) and *Lophopogonius*, an isolated form which probably diverged in an early period from *Pogonocherus*.

BIOLOGY

In so far as known, the life histories of the various members of the Pogonocherini are rather similar. The species are nocturnal, resting during the day on their host plants, where they are very inconspicuous because of their protective coloration. During the night the adult beetles are attracted to recently dead or dying branches, preferably those broken by storm and still hanging upon the tree. On these branches mating takes place and later the eggs are deposited. The larvae burrow in the dry sapwood and heartwood (*Poliaenus*, *Lophopogonius*, *Ecyrus*, and *Callipogonius*), or beneath the bark (*Pogonocherus*). The larval period is usually a single year, or rarely (*Lophopogonius*) two years. The pupal cell is constructed in the heartwood in *Poliaenus* and *Lophopogonius* and in the sapwood in *Pogonocherus*. In the latter case the cell is plugged at both ends with fibrous chips in a manner similar to that of *Monochamus*.

EARLY STAGES

The larvae of the Pogonocherini are white, tapering "grubs," which differ from other Lamiid larvae in their robust form, elongated last segment of the maxillary palpi, glabrous, striate pronotum and eusternum, and bilobed ampullae. The pupae are very similar to the adults, and in *Pogonocherus* are remarkable in that the caudal spine is not chitinous.

Craighead (1923) describes larvae which are here recognized as representing four distinct genera, and from his work the following table has been constructed:

- | | | |
|-----|---|----------------------|
| A. | Antennal rings open, hypostoma protuberant..... | Lophopogonius |
| AA. | Antennal rings closed, hypostoma not protuberant. | |
| B. | Maxillary palpi two-segmented; ninth tergum with a chitinous plate or disc..... | Pogonocherus |
| BB. | Maxillary palpi three-segmented; ninth tergum with a spinelike process. | |
| C. | Metanotum and ampullae tuberculate..... | Ecyrus |
| CC. | Metanotum and ampullae smooth, shining..... | Poliaenus |

ADULT CHARACTERS

Antennae.—The antennae seem to offer some rather constant diagnostic characters. In *Pogonocherus* and *Ecyrus* the scape is short,

stout, and very distinctly clavate; in *Sarillus* and *Callipogonius* it is stout, but not clavate; and in *Poliaenus* and *Ecteneolus* it is long and slender. In the latter genera, the third antennal segment is longer than the fourth, whereas in most of the other genera the fourth segment is longer than the third and distinctly incurved.

Prothorax.—The prothorax also exhibits some rather remarkable modifications. In *Lophopogonius* there is a long slender, blunt lateral tubercle. In *Poliaenus* and *Ecteneolus* the lateral tubercle is broadly conical and obtuse, while in *Pogonocherus* and *Sarillus* the tubercle is small and more or less acute. In the remaining genera the prothorax has no lateral armature. The discal tubercles likewise differ. In *Callipogonius* they are in the form of an elongated ridge. They are prominent but conical in *Poliaenus* and *Lophopogonius* and small or obsolete in the other genera. The anterior coxal cavities are very broadly angulated and open externally in *Lophopogonius*, less broadly but distinctly angulated in *Pogonocherus* and *Lypsimena*, narrowly angulated and more rounded in *Poliaenus*, *Callipogonius*, and *Sarillus*, and nearly closed in *Ecyrus*.

Elytra.—In *Lypsimena* the elytra are very much elongated and parallel-sided. In *Callipogonius* and *Poliaenus* there is a distinct antemedian transverse impression which is not evident in the other genera. The subbasal crest is very prominent in *Lophopogonius* and *Poliaenus* and absent or faintly indicated in *Pogonocherus*. The apices are emarginate or emarginate-dentate in *Callipogonius*, *Pogonocherus* (pars), and *Lophopogonius*, and rounded or truncate in the other groups.

Legs.—The femora are clavate in all of the genera except *Zaplous* and *Lypsimena*, and the middle tibiae have an external sinus in all but *Lypsimena* and *Callipogonius*.

Flying Hairs.—Long flying hairs cover the entire body in the genera *Poliaenus*, *Lophopogonius*, and *Callipogonius*. In *Sarillus* and *Pogonocherus* they are present but less numerous, and in the other genera they are found only on the antennae.

VARIATION

As has been previously stated, the majority of the Pogonocherini live in dead and dying branches. Under these conditions there is a considerable range of moisture and food conditions and, as a result, a corresponding range in the size of the adult individuals in any single species. In addition to differences in size, some species show variation in coloration and even in structural characters. *Pogonocherus pictus* Fall, for example, normally has emarginate elytral apices. In some individuals, however, this condition is modified by a tooth on the inner apical margin, on the outer apical margin, or even on both apical margins.

Sexual Differences.—Sexual differences are less pronounced in the Pogonocherini than in many other groups of Cerambycidae. In general, the male is smaller, less robust, and has slightly longer antennae. The most reliable difference, however, is in the structure of the last ventral abdominal segment. In the female, this segment is excavated or concave at the apex, and in the male it is broadly rounded.

Tribe **Pogonocherini** Lacordaire

Pogonocherides Lacordaire, 1872, *Genera des Coleopt.*, 9: 650.

Pogonocherini (pars) LeConte and Horn, 1883, *Class. Coleopt. N. A.*, p. 324.

Species small, rather elongated or robust. Head retractile; eyes moderately granulated, deeply emarginate, lower lobe subquadrate or subtriangular; antennae slender, clothed on inner side with flying hairs. Anterior coxal cavities usually angulated externally, closed behind; intermediate coxal cavities angulated externally but not closed. Legs short; middle tibiae with or without an external sinus; first segment of posterior tarsus subequal in length to second segment; unguis divaricate.

A tribe which agrees with the Estolini and Acanthocini in the divaricate tarsal claws and intermediate tibiae usually with an external sinus, but differing in the retractile head and open intermediate coxal cavities. Lacordaire, in his definition of the tribe, states that the intermediate coxal cavities are closed and the middle tibiae simple. This is not true of his type genus *Pogonocherus*, nor of the majority of the other members of the tribe.

LeConte and Horn, in their study of the Coleoptera of North America, grouped together a number of rather widely separated genera in the tribe Pogonocherini, including parts of Lacordaire's Estolides and Apodasyides. From the standpoint of the North American fauna this grouping was a convenient one, but in the light of the Neotropical fauna, it seems hardly justified. The writer has followed the more restricted views of Lacordaire and Aurivillius (1923), both of whom studied the group from the world standpoint.

TABLE OF GENERA

- A. Femora not distinctly clavate.
 - B. Intermediate tibiae with an external sinus; head convex between the antennal tubercles; antennae shorter than the body.....**Zaplous**
 - BB. Intermediate tibiae simple; head flat between the antennal tubercles; antennae longer than the body in both sexes.....**Lypsimena**
- AA. Femora distinctly clavate.
 - B. Intermediate tibiae simple; discal prothoracic tubercles in the form of an elongated ridge.....**Callipogonius**
 - BB. Intermediate tibiae with an external sinus; discal prothoracic tubercles rounded, often small or obsolete.
 - C. Antennal scape slender; fourth segment of antennae shorter than third segment.
 - D. Prothorax with prominent discal tubercles; body clothed with long flying hairs.....**Poliaenus**
 - DD. Prothorax without discal tubercles; flying hairs absent.....**Ecteneolus**

- CC. Antennal scape stout; fourth segment of antennae incurved, longer than third segment.
- D. Prothorax rounded at the sides, without lateral tubercles; body without long flying hairs.....**Ecyrus**
- DD. Prothorax armed with lateral tubercles; body clothed with long flying hairs.
- E. Antennal scape stout, not clavate, third segment shorter than scape; antennal tubercles approximate, prominent.....**Sarillus**
- EE. Antennal scape distinctly clavate, third segment longer than scape; antennal tubercles widely separated.
- F. Elytra with a very large subbasal crest; discal prothoracic tubercles prominent, lateral tubercles long and blunt at apex.....**Lophopogonius**
- FF. Elytra without large subbasal crest; discal prothoracic tubercles small or obsolete, lateral tubercles short, acute,
Pogonocherus

Genus *Zaplous* LeConte

Zaplous LeConte, 1878, Proc. Amer. Phil. Soc., 17: 415.

Zaplous LeConte and Horn, 1883, Class. Coleopt. N. A., p. 327.

Zaplous Leng and Hamilton, 1896, Trans. Amer. Ent. Soc., 23: 140.

Short, moderately stout. Head with vertex convex; eyes deeply emarginate, coarsely granulated; antennae shorter than the body in both sexes, scape slender, more than three times as long as second segment, fourth segment longer than third, the two together as long as the remaining segments united, segments five to eleven short, subequal. Prothorax broader than long, without lateral tubercles. Elytra parallel-sided, apices rounded. Anterior coxal cavities angulated externally. Femora stout, not clavate; middle tibiae with an external sinus; tarsi short, first segment subequal to second.

Genotype: Zaplous hubbardi Lec. (= *Ecyrus annulatus* Chev.).

This genus resembles *Ecyrus* in the unarmed prothorax and absence of long flying hairs from the body, but is readily separable from that and related genera by the clavate femora and short outer segments of the antennae. The following is the only known species:

(1) *Zaplous annulatus* (Chevrolat)

Ecyrus annulatus Chev., 1862, Ann. Soc. Ent. Fr. (4) 2: 250.

Zaplous annulatus Gahan, 1895, Trans. Ent. Soc. Lond., p. 124.

Zaplous hubbardi LeConte, 1878, Proc. Amer. Phil. Soc., 17: 415.

Zaplous hubbardi Leng and Ham., 1896, Trans. Amer. Ent. Soc., 23: 140..

Dark brown, clothed with short, prostrate brownish and grayish hairs. Eyes black; antennae annulated, sparsely setose, finely punctured. Prothorax densely, rather finely punctured, with the punctures somewhat obscured by the pubescence. Scutellum black. Elytra with coarser, more distinct punctuation, brown, with a basal and post-median transverse grayish band. Tarsi brownish, annulated. Length, 3-5 mm.

Distribution: Florida and Cuba.

Host plant: "Beaten from old vines in May"—LeConte.

This is one of the smallest and most obscure members of the Pogonocherini. It is rather variable in color, particularly as regards the extent of the pale areas of the elytra. The species is rare in collections and little is known of its habits. For the synonymy given above I am indebted to Dr. E. C. Van Dyke, who very kindly compared examples of *Z. hubbardi* with Chevrolat's type of *Ecyrus annulatus*.

Genus *Lypsimena* LeConte

Lypsimena LeConte, 1852, Jour. Acad. Nat. Sci. Phil. (2) 2: 155.

Lypsimena Thomson, 1864, Systema Ceramb., p. 397.

Lypsimena Lacordaire, 1872, Genera des Coleopt., 9: 653.

Lypsimena LeConte, 1873, Smiths. Misc. Coll., 11: 342.

Lypsimena LeConte and Horn, 1883, Class. Coleopt. N. A., p. 327.

Lypsimena Leng and Hamilton, 1896, Trans. Amer. Ent. Soc., 23: 139.

Alloeoscelis Bates, 1885, Biol. Centr.-Amer. Coleopt. (Suppl.), 5: 358.

Alloeoscelis Gahan, 1895, Trans. Ent. Soc. Lond., p. 123.

Elongate, cylindrical, a little convex; pubescence short, sparse, without flying hairs. Head flat between the antennal tubercles; eyes large, coarsely granulated; antennae longer than the body in both sexes, sparsely ciliated within; scape moderately stout, not clavate, third segment as long as first and second together, fourth segment slightly longer than third, remaining segments diminishing slightly in length toward apex. Prothorax short, subcylindrical, unarmed. Elytra elongate, subparallel; apices truncate. Femora not distinctly clavate; intermediate tibiae without an external sinus; first segment of posterior tarsus distinctly longer than second. Anterior coxal cavities angulated externally, prosternum before the coxae short, arcuate behind.

Genotype: *Lypsimena fuscata* LeConte.

This genus, like the preceding, resembles *Ecyrus* in the unarmed prothorax and absence of flying hairs from the body. It differs from the latter, however, in having nonclavate antennal scape and femora. From the other genera of the tribe it may be readily distinguished by its elongated, cylindrical form. Only two species are known:

KEY TO SPECIES OF LYPSIMENA

- | | |
|--|-------------------------|
| Sides of prothorax dilated at middle, constricted at base; punctation of prothorax coarse, rather dense..... | (1) fuscata |
| Sides of prothorax evenly rounded from base to apex; punctation of prothorax finer, sparser..... | (2) californicus |

(1) *Lypsimena fuscata* LeConte

Lypsimena fuscata LeConte, 1852, Jour. Acad. Nat. Sci. Phil. (2) 2: 155.

Lypsimena fuscata Chevrolat, 1862, Ann. Soc. Ent. Fr. (4) 2: 253.

Lypsimena fuscata Lacordaire, 1872, Genera des Coleopt., 9: 653.

Lypsimena fuscata Leng & Ham., 1896, Trans. Amer. Ent. Soc., 23: 139.

Alloeoscelis leptis Bates, 1885, Biol. Centr.-Amer. Coleopt. (Suppl.), 5: 358.

Alloeoscelis leptis Gahan, 1895, Trans. Ent. Soc. Lond., p. 123.

Dark brown, clothed with short, cinereous pubescence. Antennae slender, annulated, rufescent, scape brownish. Prothorax dilated at middle, constricted at base, coarsely, rather densely punctured. Elytra dark brown with a pale gray, interrupted vitta extending from near the base toward the apex; punctation coarse at base, finer, sparser posteriorly. Abdomen coarsely, closely punctured at sides, more sparsely at middle and apex. Length, 6–8 mm.

Distribution: Eastern United States from New York to Florida, Cuba, Mexico, Panama, Venezuela, Brazil.

As indicated above, this species is rather widely distributed. An example at hand from Morelos, Mexico (Koebele Coll. Calif. Acad. Sci.) resembles *L. californicus* very much in coloration, yet has the structural characters of *L. fuscata*.

(2) *Lypsimena californica* Horn

Lypsimena californica Horn, 1885, Trans. Amer. Ent. Soc., 12: 194.

Lypsimena californica Leng & Ham., 1896, l. c., 23: 140.

Brown, clothed with short, cinereous pubescence. Prothorax evenly rounded from base to apex, base not constricted, subequal in width to apex; punctation partially obscured by pubescence. Elytra cinereo-pubescent, with irregular interrupted longitudinal vittae of darker brownish pubescence. Body beneath coarsely, sparsely punctured. Length, 7.5–9 mm.

Distribution: California, from Fresno County south to San Diego.

Host plant: *Quercus agrifolia*.

This species resembles the preceding very closely and characters which have been previously used for their separation will not hold. The only really useful character which I can find to distinguish the two is the shape of the prothorax, which in *L. fuscata* is dilated at the middle and constricted at the base.

Genus *Callipogonius* Linsley, new genus

Body robust, subcylindrical, clothed with a short, dense pubescence, intermixed with long, flying hairs. Head moderately short, longitudinally sulcate between the antennae; eyes

deeply emarginate, lower portion slightly longer than broad; antennae longer than the body in both sexes, scape stout, not distinctly clavate, second segment about as long as broad, third segment slightly longer than the first two together, fourth segment incurved, distinctly longer than third, following segments shorter, diminishing gradually in length toward apex. Prothorax subcylindrical, about as broad as long, without lateral tubercles, disk armed with two elongated tubercles. Elytra convex, with a distinct ante-median impression; indistinctly tricostate; subbasal tubercles prominent. Femora clavate; intermediate tibiae without an external sinus. Anterior coxal cavities rounded, slightly angulate, open externally.

Genotype: Poliaenus hircinus Bates.

A rather anomalous genus, combining many characters of other genera. In the structure of the antennae (short, stout scape and long, incurved fourth segment) it agrees with *Pogonocherus* and *Ecyrus*, differing from the former in the absence of lateral thoracic tubercles and from the latter in the presence of long flying hairs on the body. This last character is shared with *Poliaenus*, the genus in which Bates originally placed his *C. hircinus*. *Callipogonius* differs from all of the other genera of the Pogonocherini except *Lypsimena* in the simple intermediate tibiae. The two known species differ as follows:

KEY TO SPECIES OF CALLIPOGONIUS

Elytral apices obliquely truncate; dorsal prominences of prothorax tuberculi-form; discal prothoracic white patch small. 4 mm. Mexico....(1) *hircinus*
 Elytral apices emarginate-truncate; dorsal prominences of prothorax prolonged backward into a horn; discal prothoracic white patch large, conspicuous. 5.5-7 mm. Texas.....(2) *cornutus*

(1) *Callipogonius hircinus* (Bates)

Poliaenus hircinus Bates, 1885, Biol. Centr.-Amer. Coleopt. (Suppl.), 5: 358.

Brownish, clothed with yellowish gray pubescence. Antennae pale, annulated with brownish, clothed with long, pale, flying hairs. Prothorax armed with two elongate, compressed discal tubercles; discal area clothed with short, dense, whitish pubescence. Elytra clothed with flying hairs, apices obliquely truncate. Body beneath black, clothed with pale grayish pubescence. Length, 4 mm.

Distribution: Mexico (Jalapa).

Known only by the type specimen which was collected at Jalapa by Herr Höge and which is now in the collection of the British Museum of Natural History.

(2) **Callipogonius cornutus** (Linsley)

Ecyrus cornutus Linsley, 1930, Pan-Pacific Ent., 7: 86, Figs. 1-2.

Brownish piceous, clothed with short, gray and brown pubescence. Head with brown pile at base of antennae, white on face and mouth-parts. Antennae annulated, slightly longer than the body in the female, distinctly so in the male. Prothorax with two laterally compressed discal tubercles which are prolonged backwards into a horn; discal area clothed with dense white pubescence. Scutellum white. Elytra with a transverse median arcuate patch of white pubescence and a similar shorter antemedian fascia; apices emarginate-truncate. Length, 5.5-7 mm.

Distribution: Brownsville, Texas.

Host plant: *Salix*.

A very attractive little longicorn, taken not uncommonly on dead and dying branches of *Salix*, in late May, June, and early July. The species is rather closely related to *C. hircinus*, but differs markedly in the structure of the prothorax and in the shape of the elytral apices.

Genus **Poliaenus** Bates

Poliaenus Bates, 1880, Biol. Centr.-Amer. Coleopt., 5: 120.

Pogonocherus (pars) Horn, 1878, Trans. Amer. Ent. Soc., 7: 42.

Pogonocherus (pars) Leng & Hamilton, 1896, l. c., 23: 135.

Pogonocherus (pars) Schaeffer, 1909, Jour. N. Y. Ent. Soc., 17: 102.

Pogonocherus (pars) Fall, 1910, Ent. News, 21: 5-9.

Pogonocherus (pars) Casey, 1913, Mem. Coleop., 4: 345-349.

Pogonocherus (pars) Linsley, 1930, Pan-Pacific Ent., 7: 77-85.

Elongate, subcylindrical, clothed with a short, dense pubescence, intermixed with long flying hairs. Head broad, longitudinally sulcate between the antennae; eyes deeply emarginate, lower lobe subquadrate; antennae slightly longer than the body in the female, distinctly so in the male, clothed with long flying hairs; scape elongate, slender, fourth segment incurved, longer than third, remaining segments shorter, diminishing in length toward apex. Prothorax armed with two lateral and two discal tubercles. Elytra elongate, with two rather prominent sub-basal crests; ante-median area transversely depressed; apices rounded or rotundate-truncate. Femora clavate; intermediate tibiae with an external sinus; tarsal segments often clothed beneath with a short, dense yellow pile.

Genotype: Poliaenus hirsutus Bates (= *Lophopoeum volitans* Lec.)

This genus has long remained unrecognized by American authors. It superficially resembles *Pogonocherus*, but differs

in the structure of the antennae and prothorax as well as the shape of the anterior coxal cavities and elytral apices. Larval studies seem to indicate that it is more closely related to *Ecyrus*. The species are confined to western North America, ranging from Guatemala to British Columbia, and found on both coniferous and broad-leaved trees and shrubs.

KEY TO SPECIES OF POLIAENUS

- Elytra with discal costae indistinct, indicated by a few vague tubercles. 1
 Elytra with three more or less equally defined longitudinal costae; pubescence gray and black. 6-11 mm. So. California. (1) **californicus**
1. Pubescence uniformly grayish or gray and black, ante-median v-shaped area pale gray. 2
 Pubescence brownish, ante-median pale area yellowish. 6
 2. Lateral prothoracic tubercles obtuse; head and prothorax clothed with long, erect, flying hairs. 3
 Lateral prothoracic tubercles acute at apex; head and prothorax without long flying hairs. 7 mm. Lower California. (2) **concolor**
 3. Elytra with a distinct postmedian black band; erect hairs of head and antennae brown and white. 4
 Elytra more or less uniformly gray, dark markings when present vague, basal or sutural; erect hairs of head and antennae uniformly white. 6-8 mm. Central California. (3) **albidus**
 4. Post median black band narrowed at the suture; discal tubercles of prothorax distinct. 5
 Post median black band broad at the suture; discal tubercles of prothorax indistinct. 6-8.5 mm. Pacific Coast and Rocky Mountains. (4) **oregonus**
 5. Punctuation of elytra coarse, not obscured by the pubescence; elytra with four series of small black tufts of hairs. 7-9 mm. Arizona. (5) **obscurus**
 Punctuation of elytra not coarse, obscured by the dense pubescence; elytra with less than four series of tufts of small black hairs. 6-9.5 mm. Northern California. (5a) **obscurus** subsp. **ponderosae**
 6. Antennal scape not attaining lateral prothoracic tubercle. 7
 Antennal scape attaining lateral prothoracic tubercle. 8
 7. Elytral costae evident; discal prothoracic tubercles prominent; elytra one-half as long as broad. 5-7 mm. Southern California. (6) **schaefferi**
 Elytral costae not evident; discal prothoracic tubercles indistinct; elytra less than half as broad as long. 6-8.5 mm. Southern Arizona. (7) **negundo**
 8. Pubescence light brown, antennae and legs rufescent; elytral pubescence dense, obscuring the basal punctures. 5-8 mm. Lower California, Central America. (8) **volitans**
 Pubescence dark brown, antennae and legs dark; elytral pubescence not obscuring the basal punctures. 9 mm. Guatemala. (9) **batesi**

(1) *Polliaenus californicus* (Schaeffer)

(Plate I, Fig. 2)

Pogonocherus californicus Schaeffer, 1908, Bull. Brook. Inst., 1: 347.

Pogonocherus californicus Schaeffer, 1909, Jour. N. Y. Ent. Soc., 17: 103.

Pogonocherus californicus Fall, 1910, Ent. News, 21: 7.

Pogonocherus californicus Schaeffer, 1932, Bull. Brooklyn Ent. Soc., 27: 153.

Pogonocherus pilatei Van Dyke, 1920, Bull. Brooklyn Ent. Soc., 15: 46.

Pogonocherus pilatei Linsley, 1930, Pan-Pacific Ent., 7: 83.

Piceous, clothed with gray and black pubescence. Head pubescent; antennae rufescent, annulated; slightly longer than the body in the female, distinctly so in the male. Prothorax transverse, finely punctured; discal and lateral tubercles prominent, obtuse. Elytra

twice as long as broad, distinctly tri-costate; ante-median area with a V-shaped, pale gray fascia, postmedian dark band narrowed at the suture. Legs piceous; base of femora rufescent; underside of tarsal segments clothed with dense yellow hairs. Body beneath pubescent with pale gray hairs. Length, 6–11 mm.

Distribution: Southern California.

Host plant: *Fremontia californica* Torr.

This is a very distinct species, differing from all of the other members of the genus in the tricostate elytra. The larvae live in dead branches of *Fremontia* in the foothill region of Southern California. The adults are active in April and May and may be taken rather abundantly on their host plant.

(2) *Poliaenus concolor* (Schaeffer)

Pogonocherus concolor Schaeffer, 1909, Jour. N. Y. Ent. Soc., 17: 102.

Pogonocherus concolor Fall, 1910, Ent. News, 21: 9.

Pogonocherus concolor Schaeffer, 1932, Bull. Brooklyn Ent. Soc., 27: 154.

Robust, uniformly clothed with grayish brown pubescence. Head without long erect flying hairs; antennae vaguely annulated, scape nearly reaching the lateral prothoracic tubercle. Prothorax with lateral tubercles more or less acute at the apex, discal tubercles distinct. Elytra sparsely punctured, lateral costae distinct, discal costae indicated by a few vague tubercles which are not armed with tufts of black hair; apices rounded. Body beneath finely, densely punctured; abdomen feebly pubescent at middle with short hairs. Length, 7 mm.

Distribution: Lower California (Santa Rosa).

Apparently related to *Poliaenus volitans* LeConte, but differing in the uniformly grayish brown pubescence and elytral costae without tufts of hair. Only the type is known.

(3) *Poliaenus albidus* Linsley

(Plate I, Fig. 5)

Poliaenus albidus Linsley, 1933, Bull. Brooklyn Ent. Soc., 28: 184.

Pogonocherus concolor Van Dyke, 1920, Bull. Brooklyn Ent. Soc., 15: 46.

Pogonocherus concolor Linsley, 1930, Pan-Pacific Ent., 7: 84.

Robust, subcylindrical, piceous, densely clothed with a uniform grayish white pubescence, with longer scattered flying hairs on head, antennae, legs, and entire upper surface. Head finely, densely pubescent; antennae annulated, flying hairs whitish. Prothorax transverse; lateral tubercles obtuse, discal tubercles evident; elytral costae feeble; apices rounded. Body beneath clothed with a grayish white pubescence. Tibiae annulated; underside of third tarsal segment clothed with a dense pad of yellow hairs. Length, 5–9 mm.

Var. *a*.—Elytra pale gray with a dense oblique patch of velvety black pubescence in subbasal area, and a similar triangular sutural patch in subapical region.

Distribution: Central California.

Host plant: *Pinus sabiniana*.

Related to *P. obscurus* Fall, but differing in the dense pale pubescence, fine elytral punctation and the white erect hairs on the head and antennae. From *P. concolor* Schffr., a species with which it has been confused, it differs in the obtuse lateral prothoracic tubercles, short antennal scape, and erect flying hairs on head. The species ranges throughout the low foothill area of the Sierra Nevada and Coast Range mountains of Central California on the Digger Pine, *Pinus sabiniana*.

(4) ***Poliaenus oregonus*** (LeConte)

(Plate I, Fig. 6)

Pogonocherus oregonus LeConte, 1861, Proc. Acad. Nat. Sci. Phil., 13: 354.

Pogonocherus oregonus Horn, 1878, Trans. Amer. Ent. Soc., 7: 42.

Pogonocherus oregonus Leng and Hamilton, 1896, l. c., 23: 136.

Pogonocherus oregonus Schaeffer, 1909, Jour. N. Y. Ent. Soc., 17: 103.

Pogonocherus oregonus Fall, 1910, Ent. News, 21: 7.

Pogonocherus oregonus Linsley, 1930, Pan-Pacific Ent., 7: 85.

Robust, piceous, clothed with gray and black pubescence. Head rather broad, pubescence not dense, white predominating; antennae annulated, as long as the body in the female, slightly longer in the male. Prothorax with obtuse lateral tubercles; discal tubercles scarcely evident. Elytra gray, with basal region and a broad postmedian band, black; basal punctation coarse, rather dense, becoming finer and less dense apically; apices rounded. Body beneath clothed with short, not dense, pale gray hairs. Length, 6–8.5 mm.

Distribution: Pacific Coast of North America and Rocky Mountain Region.

Host plants: *Abies*, *Pseudotsuga*.

A very distinct species easily recognizable by the broad postmedian black band of the elytra and the indistinct discal tuberculation of the prothorax. It is the most widely distributed species of *Poliaenus*, ranging from Tulare County, California to British Columbia and in the Rocky Mountain Region as far south as Colorado and Utah. It occurs on both the true firs and the Douglas Fir, usually at a rather high altitude. In California it is most abundant above 6,000 feet.

(5) ***Poliaenus obscurus*** (Fall)

Pogonocherus obscurus Fall, 1910, Ent. News, 21: 5.

Pogonocherus obscurus Linsley, 1930, Pan-Pacific Ent., 7: 85.

Robust, piceous, clothed with gray and black pubescence. Antennae slightly longer than the body in the female, distinctly so in the male,

annulated. Prothorax about as long as broad, lateral and discal tubercles obtuse. Elytra with antemedian area grayish and postmedian dark area narrowed at the suture; tufts of short, black setae arranged in four rows, the inner near the suture; apices rounded. Legs black; tibiae annulated. Length, 7-9 mm.

Distribution: Arizona.

Host plant: *Pinus edulis* Engl.

Related to *P. schaefferi*, but differing in the darker color, coarser punctation of the basal area of the elytra, and sparser pubescence of the upper surface. It occurs in the mountains of Northern and Southern Arizona.

(5a) ***Poliaenus obscurus* subsp. *ponderosae*** Linsley, new subspecies

Elongate, subcylindrical, rather densely clothed with gray and black pubescence. Head broad; antennae annulated, slightly longer than the body in the female, distinctly so in the male. Discal prothoracic tubercles obtuse. Elytra clothed with dense gray and black pubescence which obscures the basal punctation; postmedian black band very conspicuous, narrowed at the suture; apices rounded. Body beneath clothed with a moderately dense grayish white pubescence. Length, 6-9.5 mm.

Distribution: Northern California.

Host plant: *Pinus ponderosa* Laws.

Holotype, male (No. 3,731 Calif. Acad. Sci.) and allotype, female (No. 3,732 Calif. Acad. Sci.), from Carrville, Trinity Co., Calif., July 1918, in the collection of Dr. E. C. Van Dyke. Paratypes: Carrville, Trinity Co. July 1918, E. C. Van Dyke collector, and Trinity County, August 1, 1931, collected by R. L. Usinger. Paratypes in the collection of Dr. E. C. Van Dyke and the writer.

Distinguished from typical *P. obscurus* by the finer punctation of the basal area of the elytra, the denser elytral pubescence, and the fewer series of tufts of erect black hairs on the elytra. The subspecies occurs in Northern California on the Western Yellow Pine, *Pinus ponderosa* Laws.

(6) ***Poliaenus schaefferi*** Linsley

Poliaenus schaefferi Linsley, 1933, Bull. Brooklyn Ent. Soc., 28: 184.

Pogonocherus vandykei Schaeffer, 1932, l. c., 27: 153.

Pogonocherus californicus (pars) Van Dyke, 1920, l. c., 15: 46.

Pogonocherus californicus (pars) Linsley, 1930, Pan-Pacific Ent., 7: 83.

Robust, rather densely clothed with brown and whitish pubescence. Head distinctly longer than broad; antennae annulated, slightly longer than the body in the female, distinctly so in the male. Prothorax

transverse, discal tubercles evident, obtuse. Elytra with an ante-median yellowish brown V-shaped fascia; median fascia dark brown, narrowed at the suture, bordered anteriorly by a narrow white line. Length, 5-7 mm.

Distribution: Coastal region of southern California.

Host plants: *Pinus cembroides*, *Pinus coulteri*.

This species resembles *P. obscurus* Fall., but differs in having the head distinctly longer than broad and yellowish brown elytral fascia. It has been taken in Santa Barbara and Ventura Counties.

(7) *Poliaenus negundo* (Schaeffer)

Pogonocherus negundo Schaeffer, 1908, Bull. Brook. Inst., 1: 164.

Pogonocherus negundo Fall, 1910, Ent. News, 21: 7.

Pogonocherus negundo Linsley, 1930, Pan-Pacific Ent., 7: 79.

Elongate, subcylindrical, clothed with a rather dense brownish pubescence intermixed with long, gray and brown flying hairs. Head broader than long, densely clothed with gray and black pubescence; antennae annulated, longer than the body in both sexes. Prothorax transverse, discal tubercles obsolete; lateral tubercles rather obtuse. Elytra with a yellowish brown antemedian V-shaped area; basal and postmedian area dark brown, the latter mixed with gray; remaining surface mostly grayish brown; apices rounded. Body beneath clothed with grayish brown pubescence. Length, 6-9.5 mm.

Distribution: Mountains of southern Arizona.

Host plants: *Acer negundo*, *Rhus cismontanus*.

This species is somewhat similar in appearance to *P. volitans* Lec., but may be easily distinguished by the length of the antennal scape and absence of definite elytral costae and dorsal prothoracic tubercles. It breeds in both *Acer negundo* and *Rhus cismontanus*, and on the latter host it may be taken frequently with *Leptostylus falli* Linsley, which it resembles closely in size and coloration.

(8) *Poliaenus volitans* (LeConte)

Lophopoeum volitans LeConte, 1873, Smiths. Misc. Coll. XI, 264, p. 232.

Pogonocherus volitans Leng and Hamilton, 1896, Trans. Amer. Ent. Soc., 23: 136.

Pogonocherus volitans Schaeffer, 1909, Jour. N. Y. Ent. Soc., 17: 103.

Pogonocherus volitans Fall, 1910, Ent. News, 21: 7.

Pogonocherus volitans Linsley, 1930, Pan-Pacific Ent., 7: 85.

Poliaenus hirsutus Bates, 1880, Biol. Centr.-Amer. Coleopt., 5: 120.

Elongate, subcylindrical, clothed with pale brownish pubescence. Antennae pale, rufescent, annulated; scape attaining the lateral prothoracic tubercle. Prothorax transverse; lateral and discal tubercles prominent. Elytra rather densely pubescent; base, median area at

sides, and apex darker; elytra pubescence obscuring the basal punctation; apices obliquely truncate. Length, 5–8 mm.

Distribution: Guatemala and Lower California.

This is one of our finest species, easily known by its brownish coloration and the long antennal scape. An example of *P. hirsutus* Bates, very kindly loaned by Mr. K. G. Blair of the British Museum, I find upon comparison, agree in all essentials with LeConte's type of *P. volitans*, as well as with other examples before me from Lower California.

(9) ***Poliaenus batesi*** Linsley

(Plate I, Fig. 1)

Poliaenus batesi Linsley, 1933, Bull. Brooklyn Ent. Soc., 28: 183.

Piceous, clothed with rather sparse, short, brownish pubescence. Antennae fuscus, annulated. Prothorax transverse, lateral and discal tubercles prominent, obtuse. Elytra rather sparsely pubescent; punctation coarse, especially in basal region; antemedian V-shaped area pale grayish brown; elytral hair pencils brown, mixed with orange; apices rotundate-truncate. Length, 9 mm.

Distribution: Guatemala.

Related to *P. volitans* Lec., but somewhat larger and differing in the shape of the elytral apices, the color of the legs, antennae, elytral pubescence, and in the coarse, conspicuous punctation of the base of the elytra.

Genus ***Ecteneolus*** Bates

Ecteneolus Bates, 1885, Biol. Centr.—Amer. Coleopt. (Suppl.) 5:356.

Body elongate, without flying hairs. Head subconcave between the antennae; front short, convex; eyes coarsely granulated; antennae shorter than the body (female), clothed on inner side with flying hairs, segments three to eleven gradually decreasing in length toward apex. Prothorax stout, cylindrical, armed with lateral tubercles. Elytral apices shortly, obtusely truncate. Anterior coxal cavities broadly angulated, open. Femora clavate; intermediate tibiae with an external sinus.

Genotype: Ecteneolus flohri Bates.

This genus has not been seen and the above characters are drawn from Bates' description and the remarks following the description. It resembles *Ecyrus* in the absence of long flying hairs from the body, but because of the lateral tubercles of the prothorax I have associated it with *Poliaenus*.

(1) *Ecteneolus flohri* Bates*Ecteneolus flohri* Bates, 1885, Biol. Centr.-Amer. Coleopt. (Suppl.), 5: 360.

"Obscure fuscus, elytris griseis fasciis duabus valde undulatis (vel submacularibus) approximatis post-medianis, obscure fuscis; thorace confertim, elytris sparsim irregulariter, punctatis; antennis fusco-rufis, articulis a 3 basi carneogriseis. Long. 6 lin."—*Original description*.

Distribution: "Mexico, near the city."

Genus *Ecyrus* LeConte*Ecyrus* LeConte, 1852, Jour. Acad. Nat. Sci. Phil. (2) 2: 160-161.*Ecyrus* Leng and Hamilton, 1896, Trans. Amer. Ent. Soc., 23: 136-137.*Ecyrus* Linsley, 1930, Pan-Pacific Ent., 7: 85-90.

Robust, subcylindrical, body without long flying hairs. Head concave between the antennal tubercles; vertex with two short carinae; antennae slender, longer than the body in both sexes, clothed on inner side with long flying hairs; scape stout, clavate, fourth segment incurved, longer than third, remaining segments diminishing in length toward apex. Prothorax cylindrical, without lateral tubercles; dorsal tubercles usually small or obsolete. Elytra elongate, parallel-sided, convex, apices rounded or subtruncate. Anterior coxal cavities narrowly angulated, nearly closed; middle coxal cavities open. Femora clavate; intermediate tibiae with an external sinus.

Genotype: *Lamia dasycera* Say.

Bates (1880) places this genus in the tribe Acanthoderini, associating it with *Alphus* and *Myoxinus*, but the majority of its characters seem to point to a relationship with *Poliaenus* and the tribe Pogonocherini. In fact the larvae of *P. negundo* can scarcely be distinguished from the larvae of *Ecyrus dasycerus* (Craighead, 1923).

The genus *Ecyrus* differs from the other members of the tribe in the absence of flying hairs from the body, evenly rounded sides of the prothorax, short, clavate antennal scape, long incurved fourth antennal segment, and narrowly angulated anterior coxal cavities.

TABLE OF SPECIES OF ECYRUS

| | |
|--|---|
| Discal area of prothorax armed with prominent dorsal tubercles..... | 1 |
| Discal area of prothorax without dorsal tubercles..... | 5 |
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| Pronotum without small black asperities..... | 4 |
| 2. Pale reddish brown; pubescence white, brownish, or yellowish; small species, less than 10 mm. in length..... | 3 |
| Dark brown; pubescence mostly bluish gray, intermixed with pale and darker brown; larger species, 13 mm. Grenada.....(1) <i>hirtipes</i> | |

3. Body elongate; basal crest of elytra large, distinct; elytra without conspicuous pale markings. 8.5 mm. Puerto Rico. (2) *flavus*
Body rather short; basal elytral crest inconspicuous; elytra with an oblique, median, white fascia and a narrow, ante-median, dark brownish band. 6 mm. Puerto Rico. (3) *nanus*
4. Pale reddish brown; pubescence whitish, brownish, and yellowish; each elytron with a basal tuft of hairs. 8 mm. Haiti. (4) *hoffmani*
Brownish black; pubescence mottled brown and whitish; each elytron with four tufts of hair. 6-10 mm. Cuba. (5) *insularis*
5. Elytra with three rows of irregularly spaced tufts of short setae, and a narrow, lunate, transverse subbasal black line. 6
Elytra with a single row of three fascicles of long erect black hairs; lunate subbasal line not evident. 6-11 mm. Mexico and Southern Texas, (6) *penicillatus*
6. Elytra with a distinct postmedian pale fascia. 7
Elytra more or less unicolorous. 8
7. Prothorax nearly as long as broad, parallel-sided. 9-11 mm. Mexico, (7) *arcuatus*
Prothorax distinctly transverse, sides rounded. 8-11 mm. Texas, (8) *texanus*
8. Pubescence sparse, cinereous; elytral punctation coarse, not obscured by the pubescence. 6.5-10 mm. Eastern North America. (9) *dasycerus*
Pubescence dense, white; elytral punctation fine, somewhat obscured by the pubescence. 6.5-7 mm. Florida. (9a) *dasycerus floridanus*

(1) *Ecyrus hirtipes* Gahan

Ecyrus hirtipes Gahan, 1895, Trans. Ent. Soc. Lond., p. 127, T. 2, Fig. 6.

Ecyrus hirtipes Linsley, 1930, Pan-Pacific Ent., 7: 69.

Dark brown, clothed with bluish gray pubescence. Prothorax with two large pubescent tubercles and numerous small round black asperities above. Elytra at base with a tuft of erect brownish hairs; costae evident, with a line of punctures between each interval; apices obliquely truncate. Legs and underside of body rather densely clothed with long, flying, grayish white hairs. Length, 13 mm.

Distribution: Grenada.

This species is at once recognizable by the bluish gray pubescence and the long flying hairs on the legs and lower surface of the body. It is also the largest known member of the genus.

(2) *Ecyrus flavus* Fisher

Ecyrus flavus Fisher, 1932, Proc. U. S. N. M., 80: 80.

Pale reddish brown, densely clothed with short whitish and yellowish pubescence. Head as long as broad, sparsely, coarsely punctured, clothed with a short yellowish white pubescence; antennae reddish brown. Prothorax slightly transverse, armed with two acute dorsal tubercles placed slightly in front of middle. Elytra tricostate, with a tuft of brownish hairs near the base, and a smaller, inconspicuous tuft behind the middle; punctures arranged in double rows between the elevated intervals; pubescence whitish and yellowish, with a narrow, obliquely transverse, antemedian, dark brown fascia; apices transversely

truncate. Body beneath clothed with long recumbent whitish hairs. Length, 8.5 mm.

Distribution: Puerto Rico.

According to its describer, this species is related to *E. insularis* Fisher, but differs in being reddish brown without conspicuous pubescent markings on the elytra and with small round black asperities on the pronotum. Only the type is known.

(3) ***Ecyrus nanus*** Fisher

Ecyrus nanus Fisher, 1932, Proc. U. S. N. M., 8: 79.

Short, robust, reddish brown, clothed with whitish, brownish, and yellowish pubescence. Head about as broad as long; antennae uniformly reddish brown, clothed with short, whitish pubescence. Prothorax armed with two obtuse dorsal tubercles and numerous small, round, black asperities. Elytra tricostate, with a tuft of pale brownish hairs near the base; punctation arranged in double rows between the intervals; median fascia whitish, obliquely transverse, bordered anteriorly by a narrow brownish fascia; apices feebly obliquely truncate. Length, 6 mm.

Distribution: Puerto Rico (Boqueron and Mayaguez).

This species differs from the preceding in the broad white median elytral fascia, the shorter, stouter form, and the less conspicuous basal elytral crest.

(4) ***Ecyrus hoffmani*** Fisher

Ecyrus hoffmani Fisher, 1932, Proc. U. S. N. M., 8: 78.

Elongate, reddish brown, densely clothed with whitish, brownish, and yellowish pubescence. Head longer than broad; antennae clothed with short whitish pubescence; feebly annulated with brown. Prothorax with two acute dorsal tubercles, without trace of asperities. Elytra tricostate, with a tuft of brownish hairs near base; punctures arranged in double rows between the costae; pubescence whitish, yellowish and brownish; median fascia broad, white, bordered anteriorly by a narrow, oblique, brown fascia; apices feebly obliquely truncate. Length, 8 mm.

Distribution: Haiti (Hinche).

Related to *E. nanus* Fisher, but differing in the more elongated form and absence of small black asperities from the pronotum.

(5) ***Ecyrus insularis*** Fisher

Ecyrus insularis Fisher, 1932, Proc. U. S. N. M., 8: 76.

Elongate, brownish black, pubescence mottled brownish and whitish. Head longer than broad; antennae clothed with whitish hairs, annulated

with brown. Prothorax slightly transverse, with two rounded spots of yellow pubescence; armed with two dorsal tubercles. Elytra tricostate, with four tufts of long erect hairs; pubescence whitish, yellowish, and dark brownish, intermixed with two narrow longitudinal vittae; apices obliquely truncate. Length, 6–10 mm.

Distribution: Cuba.

This species is easily known by the two yellow fascia on the pronotum, the four tufts of hair on the elytra, and the absence of pronotal asperities.

(6) *Ecyrus penicillatus* Bates

(Plate I, Fig. 7)

Ecyrus penicillatus Bates, 1880, Biol. Centr.-Amer. Coleopt., 5: 137.

Ecyrus penicillatus Linsley, 1930, Pan-Pacific Ent., 7: 89.

Ecyrus fasciatus Hamilton, 1896, Trans. Amer. Ent. Soc., 23: 137.

Ecyrus fasciatus Linsley, 1931, Pan-Pacific Ent., 7: 105.

Robust, brownish piceous, clothed with a dense chalky white pubescence. Head narrow; antennae longer than the body in the male, shorter than the body in the female; pubescence white, annulated with brownish. Prothorax about as long as broad, gradually narrowed anteriorly; disc finely tuberculose; pubescence dense, white. Elytra with three fascicles of long erect blackish hairs placed in a single line; antemedian fascia broad, fuscous; apices rounded. Legs variegated with dark brown, tarsi clothed beneath with a pad of dense yellow hairs. Lower surface more sparsely clothed with grayish white hairs. Length, 6–11 mm.

Distribution: Southern Texas to Vera Cruz, Mexico.

Host plant: *Salix*.

This species is one of the finest of our Lamiinae. Its chalky white pubescence variegated with patches of dense and sparser hairs and a broad antemedian fascia, gives it the appearance of a piece of lichen. The adult beetles may be collected in late May, June, and early July from dead branches of willow. Mr. K. G. Blair very kindly compared typical examples of *E. fasciatus* from Texas with the type of *E. penicillatus* from Vera Cruz, and found them to be identical.

(7) *Ecyrus arcuatus* Gahan

(Plate I, Fig. 9)

Ecyrus arcuatus Gahan, 1892, Trans. Ent. Soc. Lond., p. 259, T. 12, Fig. 2.

Ecyrus arcuatus Linsley, 1930, Pan-Pacific Ent., 7: 90.

Elongate, cinereous. Head clothed with yellowish white pubescence; antennae slightly longer than the body in the female, distinctly so in the male. Prothorax nearly as long as broad, parallel-sided. Elytra

coarsely punctured, tricostate, the costae and suture with a series of short tufts of brownish setae; ante-median pale area arcuate, clothed with grayish white pubescence; apices truncate. Length, 9–11 mm.

Distribution: Mexico (Yucatan).

This species is very closely related to *E. dasycerus* Say, but it is distinguished by its larger size and ante-median pale area. It is probably more closely related to *E. texanus* Schaeffer, differing mainly in the more parallel-sided prothorax.

(8) *Ecyrus texanus* Schaeffer

(Plate I, Fig. 8)

Ecyrus texanus Schaeffer, 1908, Bull. Brook. Inst., 1: 347.

Ecyrus texanus Linsley, 1930, Pan-Pacific Ent., 7: 90.

Robust, clothed with brown, fulvous, and whitish pubescence. Head rather densely clothed with grayish brown pubescence; antennae annulated, longer than the body in both sexes. Prothorax transverse, surface finely tuberculose. Elytra coarsely punctate; median fascia whitish, oblique, bordered behind with a band of black pubescence which is narrowed at the suture; subapical fascia white; basal and apical region variegated with fulvous and dark brown; apices obliquely truncate. Length, 8.5–11 mm.

Distribution: Brownsville, Texas.

Host plant: *Acacia farnesiana*.

This species was described as a variety of *E. dasycerus* and has been treated as such by recent authors. However, in a long series of specimens collected by the writer at Brownsville, Texas, in May and June, 1932, none of the examples show any intergradation with that species. *E. texanus* is distinct in size, form, coloration, host plant and distribution. It seems, therefore, justifiable to consider it a distinct species.

(9) *Ecyrus dasycerus* Say

Lamia dasycera Say, 1827, Jour. Acad. Nat. Sci. Phil., 5: 270.

Ecyrus dasycerus LeConte, 1852, l. c., (2) 2: 160.

Ecyrus dasycerus Leng & Hamilton, 1896, Trans. Amer. Ent. Soc., 23: 137.

Ecyrus dasycerus Linsley, 1930, Pan-Pacific Ent., 7: 89.

Lamia obscura Haldeman, 1847, Trans. Amer. Phil. Soc., 10: 50.

Ecyrus exiguus LeConte, 1852, Jour. Acad. Nat. Sci. Phil. (2) 2: 161.

Ecyrus exiguus Gahan, 1892, Trans. Ent. Soc. Lond., p. 259.

Ecyrus exiguus Leng and Hamilton, 1896, Trans. Amer. Ent. Soc., 23: 137.

Elongate, subparallel, clothed with cinereous pubescence. Antennae annulated, longer than the body in both sexes. Prothorax transverse. Elytra indistinctly tricostate, the costae indicated by small irregularly spaced tufts of setae; apices truncate. Legs clothed with short, cinereous hairs. Length, 6.5–10 mm.

Distribution: Eastern North America.

Host plants: *Castanea*, *Quercus*, *Robinia*, *Celtis*, *Acer*, *Paulownia*, *Ampelopsis*, and *Tilia*.

A rather common species found from April to July in eastern United States and Canada. It is readily known by the more or less uniform cinereous pubescence.

(9a) ***Ecyrus dasycerus*** subsp. ***floridanus*** Linsley, new subspecies

Similar in size and form to *E. dasycerus*, but differing in the elytral pubescence being denser and the punctuation finer. The body is clothed with a dense white pubescence. Length, 6–8 mm.

Distribution: Florida.

Type male, and allotype female, collected by Dr. W. S. Blatchley at Royal Palm Park, Florida, March 1924; paratype: Miami, Florida, April 21, collected by Mr. J. N. Knull.

Genus ***Sarillus*** Bates

Sarillus Bates, 1885, Biol. Centr.-Amer. Coleopt. (Suppl.), 5: 359.

Cylindrical, clothed with long flying hairs. Head broad, subquadrangular, concave between the antennae; antennae longer than the body in both sexes; scape stout, not clavate, third segment shorter than scape, fourth segment about twice as long as third. Prothorax slightly transverse; lateral tubercles acute at apex. Elytra with a subbasal crest; apices rounded. Anterior coxal cavities narrowly angulated externally; intermediate cavities nearly closed. Femora clavate; intermediate tibiae with an external sinus.

Genotype: *Sarillus pygmaeus* Bates.

This genus was originally associated by Bates with *Poliaenus* and placed in the *Pogonocherini*. Aurivillius (1923) places it in the tribe Ptericoptini. The tarsal claws, however, are not divergent as in that group and the essential characters agree more closely with *Pogonocherus* than with any member of the Ptericoptini.

(1) ***Sarillus pygmaeus*** Bates

Sarillus pygmaeus Bates, 1885, Biol. Centr.-Amer. Coleopt. (Suppl.), 5: 359.

Pubescence variegated with brownish, grayish, and black. Antennae pale reddish, annulated with brown; scape variegated with dark brown. Prothorax brownish, finely punctured. Elytra with a subbasal fascicle of brown hairs; antemedian pale area grayish, postmedian dark brown,

narrowed at the suture, apical area pale gray; apices rounded. Legs pale reddish, tarsi padded beneath with a dense patch of yellow hairs. Length, 3.5–5 mm.

Distribution: Panama and Guatemala.

This little species looks very much like a small *Pogonocherus* with the color pattern and rounded elytral apices of a *Poliaenus*. It may be separated from these genera by the stout, non-clavate antennal scape and very short third segment of the antennae. Examples have been seen from Bugaba, Panama (Champion); Paraiso, Canal Zone (E. A. Schwarz); and Livingston, Guatemala (Barber and Schwarz), all in the collection of the United States National Museum.

Genus *Lophopogonius* Linsley, new genus

Elongate, subcylindrical, clothed with long, recumbent pubescence intermixed with flying hairs. Head very concave between the antennal tubercles; antennae slender; scape stout, clavate, shorter than third segment; fourth segment longer than third, distinctly incurved, remaining segments diminishing gradually in length toward apex. Prothorax transverse, armed with elongate, blunt, lateral tubercles; dorsal tubercles prominent, obtuse, with an elevated callous on median line at basal third. Elytra elongate, subparallel, humeri prominent, costae evident but not distinct; subbasal region with a large, elongated, laterally compressed ridge; apices emarginate-dentate. Anterior coxal cavities broadly angulated, open externally; intermediate coxal cavities also angulated, open. Femora clavate; intermediate tibiae with an external sinus. First segment of posterior tarsi nearly twice as long as second segment.

Genotype: *Pogonocherus crinitus* LeConte.

This genus is established for a species which differs radically from other members of the genus *Pogonocherus* and cannot conveniently be retained in that group. Dr. George Horn (1878) was the first to suggest that it was not congeneric with the other species of *Pogonocherus*, but at that time only four species were known and he hesitated dividing the genus. The most important characters separating *Lophopogonius* from *Pogonocherus* are the elongated, blunt, lateral prothoracic tubercles, the elevated subbasal elytral ridge, the broadly angulated anterior coxal cavities, and the long first segment of the posterior tarsi.

(1) **Lophopogonius crinitus** (LeConte)

(Plate I, Fig. 12)

Pogonocherus crinitus LeConte, 1873, Smiths. Misc. Coll., 11:267.*Pogonocherus crinitus* Horn, 1878, Trans. Amer. Ent. Soc., 7: 42.*Pogonocherus crinitus* Leng and Hamilton, 1896, l. c., 23: 135.*Pogonocherus crinitus* Schaeffer, 1909, Jour. N. Y. Ent. Soc., 17: 102.*Pogonocherus crinitus* Fall, 1910, Ent. News, 21: 7.*Pogonocherus crinitus* Linsley, 1930, Pan-Pacific Ent., 7: 80.

Densely clothed with ashy gray pubescence. Head coarsely punctured; antennae annulated, slightly longer than the body in the female, distinctly so in the male. Prothorax coarsely punctured, densely clothed with ashy gray pubescence. Elytra coarsely punctured throughout, densely clothed with ashy gray pubescence, variegated with paler or darker hairs, but without a conspicuous pale fascia; flying hairs whitish, intermixed with suberect brownish hairs on dorsal surface. Length, 6–10 mm.

Distribution: Pacific Coast of North America.

Host plants: *Quercus agrifolia*, *Q. garryana*.

This species is distinguished by the ashy gray pubescence without conspicuous pale areas on the elytra, and by the very long flying hairs covering the legs, antennae, and upper and lower surface. It breeds in dead branches of Live Oak, and the adults are active in early spring (February to May).

Genus **Pogonocherus** Zetterstedt*Pogonocherus* Zetterstedt, 1828, Fauna Ins. Lapponica, p. 364.*Pogonocherus* LeConte, 1852, Jour. Acad. Nat. Sci. Phil. (2) 2: 159.*Pogonocherus* Lacordaire, 1872, Genera des Coleopt., 9: 653.*Pogonocherus* Horn, 1878, Trans. Amer. Ent. Soc., 7: 42.*Pogonocherus* Leng and Hamilton, 1896, l. c., 23: 135.*Pogonocherus* Schaeffer, 1909, Jour. N. Y. Ent. Soc., 17: 102–103.*Pogonocherus* Fall, 1910, Ent. News, 21: 5–9.*Pogonocherus* Casey, 1913, Mem. Coleopt., 4: 345–349.*Pogonocherus* Linsley, 1930, Pan-Pacific Ent., 7: 79–90.*Pityphilus* Mulsant, 1863, Coleopt. France, Longicornes, ed. 2, p. 302.*Pityphilus* Lacordaire, 1872, Genera des Coleopt., 9: 653, nota 2.*Pityphilus* Linsley, 1930, Pan-Pacific Ent., 7: 78.

Robust, subcylindrical, clothed with a short, recumbent pubescence intermixed with long flying hairs. Head large, strongly concave between the antennal tubercles; antennae a little longer than the body, usually annulated, clothed along the inner side with long flying hairs; scape stout, clavate, shorter than third segment; fourth segment longer than third, incurved, remaining segments diminishing gradually in length toward apex. Prothorax transverse, cylindrical, with a short, acute, lateral tubercle. Elytra short, with or without costae, often with tufts of erect hairs. Anterior coxal cavities angu-

lated, open externally. Femora clavate; intermediate tibiae with an external sinus.

Genotype: *Cerambyx fasciculatus* DeGeer.

Distinguished from other genera in the tribe by the proportions of the first, third, and fourth antennal segments, the shape of the anterior coxal cavities, and the form of the elytra. The species may be conveniently divided into two subgenera:

Elytral apices rounded or truncate. **Pogonocherus**
Elytral apices emarginate or emarginate-dentate. **Eupogonocherus**

Subgenus **Pogonocherus** Zetterstedt

In this subgenus belong *P. fasciculatus* DeG. (type), *P. ovatus* Goeze, *P. decoratus* Fairm., and other Palaearctic species with rounded or truncate elytral apices. This is the group to which Mulsant (1863) applied the name *Pityphilus*, incorrectly restricting the name *Pogonocherus* to the group including *P. hispidus* Linn. and *P. hispidulus* Piller. Zetterstedt, in his original description of the genus, includes only *P. fasciculatus* which must therefore remain the genotype. Only one species of the restricted genus occurs in North America.

(1) **Pogonocherus** (s. str.) **penicillatus** LeConte

- Pogonocherus penicillatus* LeConte, 1850, Agassiz Lake Sup., p. 234.
Pogonocherus penicillatus Horn, 1878, Trans. Amer. Ent. Soc., 7: 42.
Pogonocherus penicillatus Leng and Hamilton, 1896, l. c., 23: 135.
Pogonocherus penicillatus Casey, 1913, Mem. Coleopt., 4: 346.
Pogonocherus penicillatus Linsley, 1930, Pan-Pacific Ent., 7: 79.
Pogonocherus penicillatus LeConte, 1852, Jour. Acad. Nat. Sci. Phil. (2) 2: 160.
Pogonocherus penicillatus Schaeffer, 1909, Jour. N. Y. Ent. Soc., 17: 102.
Pogonocherus penicillatus Fall, 1910, Ent. News, 21: 8.
Pogonocherus alaskanus Schaeffer, 1908, Bull. Brook. Inst., 1: 385.

Robust, reddish brown, clothed with brown and white pubescence. Head rather broad; antennae reddish brown to piceous, annulated, slightly longer than the body in the female, distinctly so in the male. Prothorax transverse, with a shining median tubercle; punctation moderately fine. Elytra tricostate, with four tufts of erect black hairs along inner costae; surface coarsely punctured; pubescence variegated brownish, black, and fulvous, with an oblique antemedian white fascia; apices variable, truncate or rounded. Legs variegated with gray and brownish pubescence. Body beneath clothed with long gray hairs. Length, 4.5–6 mm.

Distribution: Eastern North America to Rocky Mountains, and British Columbia to Alaska.

Host plant: *Picea*.

This is a very widely distributed species, ranging from Eastern United States and Canada westward to the Rocky Mountains and British Columbia. From the latter region it extends up the coast into Alaska where it occurs on *Picea englemanni*. It is easily recognizable by the four fascicular tufts of hair on the elytra and the well defined ante-median white fascia.

Subgenus **Eupogonocherus** Linsley, new subgenus

In this group belong those species with emarginate or emarginate-dentate elytral apices (i. e. the majority of the Palaearctic and North American species). Type: *Cerambyx hispidus* Linn.

KEY TO THE NORTH AMERICAN SPECIES OF EUPOGONOCHERUS

- Prothorax with a small, round, shining, median tubercle; elytra with tufts of erect black setae. 1
 Prothorax without median tubercle; elytra without tufts of setae. 3
 1. Elytral costae not evident; tufts of erect black elytral setae three or less. 2
 Elytra tricostate, with four or more tufts of erect black setae along inner costae; ante-median elytral fascia acute. 5.5-9 mm. Pacific Coast and Rocky Mountains. (1) **propinquus**
 2. Fulvous, with three small tufts of erect black hairs on each elytron; abdominal segments densely clothed along the sides with long, white, pubescence. 13 mm. Arizona. (2) **arizonicus**
 Reddish brown, with two tufts of erect hairs on each elytron; abdominal segments sparsely clothed at sides with pale pubescence. 6 mm. Arizona. (3) **medianus**
 3. Elytral costae not evident; antennal scape moderate. 5
 Elytra subcostate; antennal scape stout. 5.5-7.5 mm. North Pacific Coast and Rocky Mountains. (4) **pictus**
 4. Elytra and entire upper surface with long suberect hairs; prothorax as broad as long. 4.5-6.5 mm. Northern and colder parts of North America. (5) **mixtus**
 Elytra and upper surface without long suberect hairs; prothorax distinctly transverse. 4.5-6 mm. Northern and colder parts of North America, (6) **parvulus**

(1) **Pogonocherus (Eupogonocherus) propinquus** Fall

(Plate I, Fig. 11)

Pogonocherus propinquus Fall, 1910, Ent. News, 21: 6.

Pogonocherus propinquus Linsley, 1930, Pan-Pacific Ent., 7: 80.

Piceous, clothed with gray and white pubescence. Antennae annulated, about as long as the body in the female, slightly longer in the male. Prothorax transverse, with two moderate discal tubercles and a small polished median tubercle. Elytra tricostate, the lateral costae evanescent at base; inner costae with several tufts of black setae; apices emarginate. Length, 5.5-9 mm.

Distribution: Pacific Coast and Rocky Mountains.

Host plants: *Pinus ponderosa*, *P. contorta*, *P. monticola*.

In this species there are usually five fascicles of short, suberect hairs on the elytra and the ante-median pale fascia of the elytra is acute. The adults beetles are found in the middle and higher altitudes of Pacific Coast and Rocky Mountains on *Pinus*.

(2) ***Pogonocherus (Eupogonocherus) arizonicus*** Schaeffer

Pogonocherus arizonicus Schaeffer, 1908, Bull. Brook. Inst., 1: 346.

Pogonocherus arizonicus Schaeffer, 1909, Jour. N. Y. Ent. Soc., 17 :102.

Pogonocherus arizonicus Fall, 1910, Ent. News, 21: 8.

Pogonocherus arizonicus Casey, 1913, Mem. Coleopt., 4: 346.

Pogonocherus arizonicus Linsley, 1930, Pan-Pacific Ent., 7: 80.

Elongate, subparallel, clothed with fulvous and white pubescence. Head coarsely, sparsely punctate; antennae annulated, subequal in length to body (female). Prothorax as broad as long, with a small, shining, median tubercle. Elytra coarsely, sparsely punctate; fulvous, antemedian fascia whitish, a series of three tufts of short erect black hairs near the suture. Abdominal segments at sides and apex densely pubescent with long recumbent hairs. Length, 13 mm.

Distribution: Arizona (Huachuca Mts.).

Host plant: *Pinus*.

This is our largest species of *Pogonocherus*. It is readily distinguished by the absence of elytral costae and the three tufts of setae on the elytra. It occurs at high altitudes in the Huachuca Mountains.

(3) ***Pogonocherus (Eupogonocherus) medianus*** Linsley, new species

(Plate I, Fig. 10)

Elongate, reddish brown, clothed with brownish, white, and black pubescence. Antennae annulated, longer than the body (male). Prothorax slightly transverse, with a small median polished tubercle. Elytra brownish, with a broad antemedian white fascia which narrows behind to a thin line and becomes evanescent toward apex; on the white line are two tufts of erect black setae; apices emarginate-dentate. Abdominal segments evenly, sparsely clothed with pale pubescence. Length, 6 mm.

Distribution: Arizona (Chiricahua Mts.).

Type, male, collected by the writer in the Chiricahua Mountains, Arizona, on July 6, 1930. The species is related to *P. arizonicus* Schaeffer, but differs in its smaller size, brownish color, sparse pubescence on the abdominal segments, and in having only two tufts of erect black setae on the elytra.

(4) **Pogonocherus (Eupogonocherus) pictus** Fall

- Pogonocherus pictus* Fall, 1910, Ent. News, 21: 6.
Pogonocherus pictus Casey, 1913, Mem. Coleopt., 4: 356.
Pogonocherus pictus Linsley, 1930, Pan-Pacific Ent., 7: 80.
Pogonocherus simplex Hamilton, 1896, Trans. Amer. Ent. Soc., 23: 135.
Pogonocherus emarginatus Casey, 1913, Mem. Coleopt., 4: 347.
Pogonocherus fastigiatus Casey, 1913, l. c., p. 348.

Piceous, variegated with white and brownish pubescence. Antennal scape stout. Elytra subcostate; antemedian white band broad at suture, not reaching the side margin; apices emarginate or emarginate-dentate. Length, 5.5–7 mm.

Distribution: Rocky Mountains and North Pacific Coast Region.

Host plants: *Pinus ponderosa*, *P. flexilis*, *P. contorta* and *Larix occidentalis*.

This species is very closely related to *P. mixtus* Hald. but differs in having subcostae elytra and a very stout antennal scape.

(5) **Pogonocherus (Eupogonocherus) mixtus** Haldeman

- Pogonocherus mixtus* Haldeman, 1847, Trans. Amer. Phil. Soc. (2) 10: 50.
Pogonocherus mixtus LeConte, 1852, Jour. Acad. Nat. Sci. Phil. (2) 2: 160.
Pogonocherus mixtus Horn, 1878, Trans. Amer. Ent. Soc., 7: 42.
Pogonocherus mixtus Leng and Hamilton, 1896, l. c., 23: 136.
Pogonocherus mixtus Schaeffer, 1909, Jour. N. Y. Ent. Soc., 17: 102.
Pogonocherus mixtus Fall, 1910, Ent. News, 21: 9.
Pogonocherus mixtus Casey, 1913, Mem. Coleopt., 4: 348.
Pogonocherus mixtus Linsley, 1930, Pan-Pacific Ent., 7: 80.
Pogonocherus simplex LeConte, 1873, Smiths. Misc. Coll., 11: 237.
Pogonocherus simplex Casey, 1913, Mem. Coleopt., 4: 348.

Elongate, subparallel, piceous, variegated with white and brownish pubescence. Prothorax as broad as long, without a median tubercle. Elytra striately punctured, without costae or fascicular tufts; post-median pale area broad, attaining the sides but seldom reaching the suture; apices emarginate-dentate. Underside sparsely clothed with pale recumbent hairs. Length, 4.5–6 mm.

Distribution: Eastern North America, Rocky Mountains, and North Pacific Coast Region.

Host plants: *Pinus*, *Picea*.

A very widely distributed species occurring on pines from the Atlantic Coast to British Columbia. It is easily known by the long, suberect hairs of the upper surface and elytra.

(6) **Pogonocherus (Eupogonocherus) parvulus** LeConte

- Pogonocherus parvulus* LeConte, 1852, Jour. Acad. Nat. Sci. Phil. (2) 2: 160.
Pogonocherus parvulus Casey, 1913, Mem. Coleopt., 4: 346.
Pogonocherus parvulus Linsley, 1931, Pan-Pacific Ent., 7: 106.
Pogonocherus salicicola Casey, 1913, Mem. Coleopt., 4: 347.
Pogonocherus salicicola Linsley, 1930, Pan-Pacific Ent., 7: 81.

Elongate, piceous, variegated with whitish pubescence. Head broad, antennae annulated, longer than the body in the male, subequal in length to the body in the female. Prothorax transverse. Elytra without costae or fascicular tufts of hair; antemedian pale area acute, median fascia dark brown, apical area variegated with brownish and white pubescence; apices emarginate-dentate. Body beneath sparsely clothed with recumbent pale hairs. Length, 4.5–6 mm.

Distribution: Colder and more northern parts of North America.

Host plant: *Salix*.

This species is closely related to the preceding, but may be distinguished by the absence of long, suberect hairs on the elytra and upper surface. *P. mixtus* usually occurs on coniferous trees, *P. parvulus* on *Salix*.

APPENDIX

Genus **Alphomorphus** Linsley, new genus

Robust, oblong, clothed with a short, dense pubescence, intermixed with long, flying hairs on the antennae, legs, and entire upper surface. Head large, subquadrate, longitudinally sulcate between the antennae; eyes coarsely granulated, with large callosities above; antennae longer than the body in both sexes; scape stout, attaining the lateral prothoracic tubercle, segments three and four subequal to first, remaining segments decreasing gradually in length toward apex. Prothorax broader than long; dorsal surface quadrituberculate, lateral tubercles large, bulbous; anterior coxal cavities rounded, closed externally; intermediate coxal cavities closed behind. Elytra nearly two-thirds as broad as long, with a prominent subbasal crest; apices rotundate-truncate. Legs short; intermediate tibiae with an external sinus; unguis divaricate.

Genotype: *Pogonocherus vandykei* Linsley¹ (Plate I, Fig. 3).

The exact affinities of this genus are rather puzzling. The species on which it is founded was originally placed in the Pogonocherini, but the receipt of fresh specimens has revealed a number of characters entirely out of keeping with that tribe. Its relationship seems rather with the Acanthoderini, particularly with such genera as *Pycnomorphus*, *Alphus*, and *Myoxinus*. In the form of the prothorax and elytra it most closely ap-

¹*Pogonocherus vandykei* Linsley. Pan-Pac. Ent., 7:82.

proaches *Pycnomorphus*, but differs from that, as well as all of the other known genera of the Acanthoderini, in the long flying hairs of the antennae, legs, and entire upper surface, as well as the elevated, crested, subbasal elytral tubercles.

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²Only papers important from the standpoint of the North American fauna are listed.

EXPLANATION OF PLATE

- Fig. 1. *Poliaenus batesi* Linsley.
- Fig. 2. *Poliaenus californicus* (Schaeffer).
- Fig. 3. *Alphomorphus vandykei* subsp. *grandis* Linsley.
- Fig. 4. *Poliaenus obscurus ponderosae* Linsley.
- Fig. 5. *Poliaenus albidus* Linsley.
- Fig. 6. *Poliaenus oregonus* (LeConte).
- Fig. 7. *Ecyrus penicillatus* Bates.
- Fig. 8. *Ecyrus texanus* Schaeffer.
- Fig. 9. *Ecyrus arcuatus* Gahan.
- Fig. 10. *Pogonocherus medianus* Linsley.
- Fig. 11. *Pogonocherus propinquus* Fall.
- Fig. 12. *Lophopogonius crinitus* (LeConte).



